CERTIFICATE OF CONFORMITY

Issued to:	EcoFlow Inc. RM 401, Plant #1, Runheng Industrial Zone, Fuyuanyi Road, Zhancheng Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province, P.R. China
For the product:	EcoFlow PowerOcean Hybrid Inverter
Trade name:	ECOFLOW or ECOFLOW
Type/Model:	EF HD-P1-3K-S1, EF HD-P1-3.68K-S1, EF HD-P1-4.6K-S1, EF HD-P1-5K-S1, EF HD-P1-6K-S1
Ratings:	See Annex
Manufactured by:	EcoFlow Inc. RM 401, Plant #1, Runheng Industrial Zone, Fuyuanyi Road, Zhancheng Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province, P.R. China
Requirements:	Engineering Recommendation G100 Issue 2 – Amendment 2:2023

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 6167409.50.

The examination has been carried out on one single specimen of the product. The certificate does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

This Test Certificate expires at the latest on 15 March 2029 or expires upon withdrawal of one of the above mentioned standards.

Shanghai, 15 March 2024 Certificate Number: 6167409.01COC

DEKRA Testing and Certification (Shanghai) Ltd.

Cliff Lin
Certification Manager

© Integral publication of this certificate and adjoining reports is allowed

Accreditation of the certification body by IAS according to ISO/IEC 17065 for products. PCA-141
Accreditation is valid in the areas of certification mentioned in the certificate.

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Annex

Document no. : 6167409.01COC

Ratings of the test product:

Specifications table					
Model	EF HD-P1-3K-S1	EF HD-P1-3.68K-S1	EF HD-P1-4.6K-S1	EF HD-P1-5K-S1	EF HD-P1-6K-S1
Input:					
Vmax PV (Vdc)	600				
MPPT Voltage Range (Vdc)	90-520				
Isc PV (absolute Max.) (A)	20 / 20				
Number of MPP trackers	2				
Max. PV input current (A)	18 / 18				
Battery Port (charge / discharge):					
Battery type	Li-ion				
Battery Nominal Voltage (V)	790				
Max Battery Voltage (V)	800				
Rated Current (A)	7.6	7.6	7.6	7.6	7.6
Max. Current (A)	7.6	7.6	7.6	7.6	8.4
AC Grid (output and input):					
Normal AC Voltage (Vac)	L/N/PE, 230 Vac				
Frequency (Hz)	50				
Max. output / input current (A)	15 / 16	18.4 / 19.7	23 / 24.6	25 / 26.7	30 / 32
Rated output Current (A)	13.1	16.0	20	21.7	26.1
Nominal output Power (W)	3000	3680	4600	5000	6000
Max. apparent output Power (VA)	3000	3680	4600	5000	6000
Power factor(adjustable)	-0.8...1...+0.8				
AC Load output:					
Normal Voltage (Vac)	L/N/PE, 230 Vac				
Frequency (Hz)	50				
Max. output Current (A)	16	19.7	24.6	26.7	32
Rated output Current (A)	13.1	16.0	20	21.7	26.1
Nominal output Power (W)	3000	3680	4600	5000	6000
Max. apparent output Power (VA)	3000	3680	4600	5000	6000
Others:					
Ingress protection (IP)	IP65				
Protective class	Class I				
Temperature (°C)	-20°C to +50°C				
Inverter Isolation	Non-isolated				
Overvoltage category	OVC III (AC Main), OVC II (DC)				

Annex

Document no. : 6167409.01COC

G100/2 - Form B - Compliance Verification Report for Customer Export or Import Limitation Schemes	
Extract form test report number:	**6167409.50**

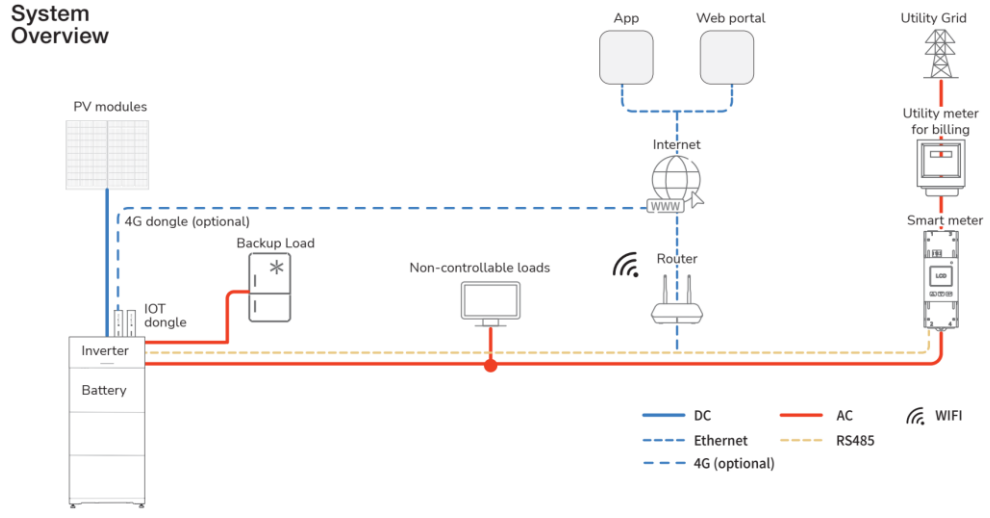
CLS Designation	EcoFlow PowerOcean Hybrid Inverter with Single-Phase Smart Meter
Manufacturer name	EcoFlow Inc.
Address	RM 401, Plant #1, Runheng Industrial Zone, Fuyuanyi Road, Zhancheng Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province, P.R. China
CLS information:	
Hybrid Inverter	EF HD-P1-3K-S1, EF HD-P1-3.68K-S1, EF HD-P1-4.6K-S1, EF HD-P1-5K-S1, EF HD-P1-6K-S1
Single-Phase Smart Meter	YDM201D, ADL200N-CT, DDSU666

Export/Import capabilities			
Export	Y	Import	Y

Description of Operation

EREC G100 section 4.2 requires a description of the **CLS**, and schematic diagram, to be provided to the **Customer**. Please provide that description and the diagram here.

schematic diagram:



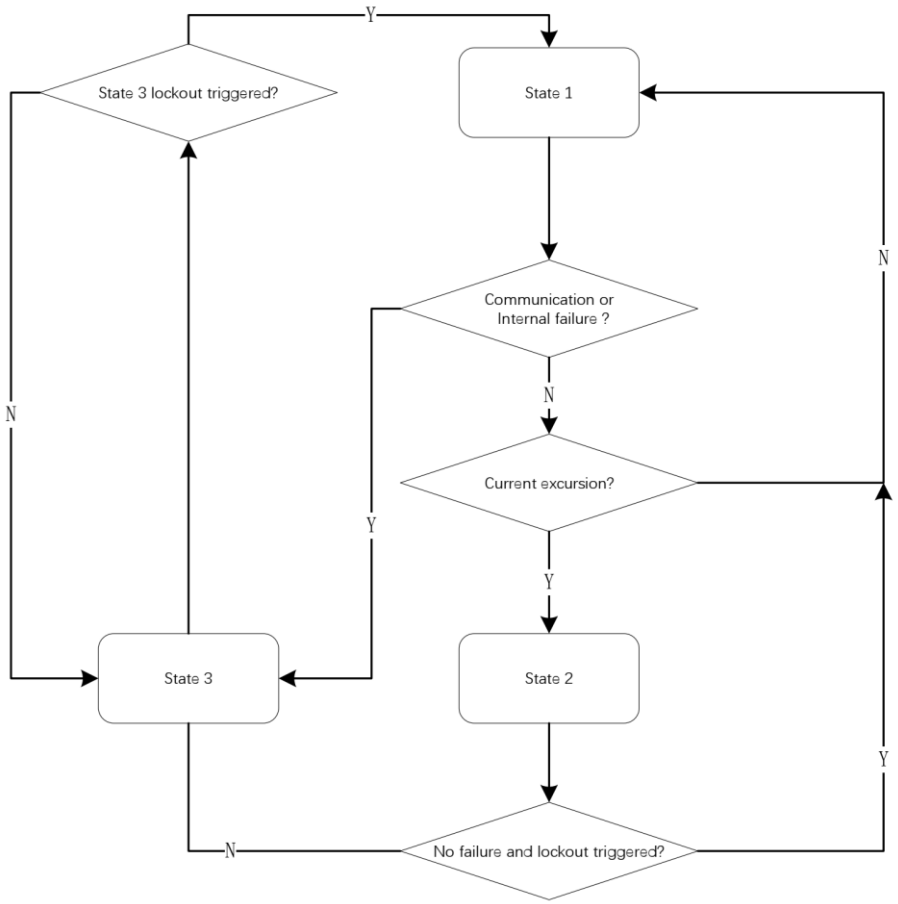
Description

The CLS system is composed with the EcoFlow PowerOcean Hybrid Inverter and Single-Phase Smart Meter.

The Single-Phase Smart Meter is installed at downstream of the utility meter for billing of grid connection point of the system and measuring the current / voltage / power data, etc. The measuring data will be obtained by the inverter through the RS485 communication line between the inverter and the smart meter. Inverter will dynamically control its generation power or consumption power based on the metering data to guarantee the export current or import current at the grid connection point into the distribution network will not exceed the CLS in a normal condition.

Communications Media
Document the provisions made for the use of various communication media, and both the inherent characteristics and the design steps made to ensure security and reliability.
Inverter and external module communication: • Inverter communicates with meter through RS-485 interface • Inverter communicates with external battery pack through CAN interface • Inverter communicates with IOT module (WiFi and BLE) in with type-C interface • IOT module communicates with 4G module through USB interface • IOT module communicates with mobile phone through Bluetooth • IOT module communicates with server through WIFI / 4G / ETH
Cyber Security
Confirm that the **Manufacturer** or **Installer** of the **CLS** has provided a statement describing how the **CLS** has been designed to comply with cyber security requirements, as detailed in section 4.7.
EcoFlow Inc. declare that certified hybrid inverter EF HD-P1-3K-S1, EF HD-P1-3.68K-S1, EF HD-P1-4.6K-S1, EF HD-P1-5K-S1, EF HD-P1-6K-S1 and any associated equipment to be included in the certification, are in compliance with Cyber security requirements in accordance with the standards: • ENA Engineering Recommendation G98 Issue 1 Amendment 7 2022; • ENA Engineering Recommendation G99 Issue 1 Amendment 9 2022; • ETSI EN 303 645; Please also refer to the provided documents Ecoflow Cyber Security Declaration_240202_V1.0
Power Quality Requirements
Where the **CLS** includes the power electronics that controls generation or loads (as opposed to the power electronics being included in **Devices** that are subject to their own power quality compliance requirements) please submit the harmonic and disturbance information here as required by EREC G5 and EREC P28.
EcoFlow PowerOcean Hybrid Inverter used with Single-Phase Smart Meter fulfil the power quality test. Refer to the EREC G98/1-7 (up to 16A) and EREC G99/1-9 (more than 16A) test report for detail.

Fail Safe
CLS internal failure: please submit here the description of the internal **Fail Safe** design and operation. Please also document how it has been demonstrated, including the non-volatile recording of times and numbers of state 2 operations, and confirm the overall response of the **CLS** to this internal failure.



Ecoflow CLS was designed with a fail-safe mechanism according to G100 section 4.5. Therefore, the system design ensures that it will limit the imported/exported current at the site to the DNO's agreed limit(s).

All the components in the Ecoflow CLS system are either wired or wireless and are registered by the CLS. At the commissioning process the device is registered as a generation/non generation device. In the event of a detected failure the system will operate the Fail-safe mechanism by reducing the component generation to zero immediately according to the table above.

Communication and power supply failures between **Components** and **Devices**. Please document here compliance with EREC G100 section 5.5.

For each test confirm that the **CLS** enters state 3 operation, and that on restoration of communication or power to the relevant **Component** or **Device** it is then possible to immediately reset the **CLS** into state 1 operation.

Component/Device number/description	Communication failure test	Power supply failure test
Hybrid inverter	Inverter internal relay trip in ＜ 5s	Inverter internal relay trip in ＜ 5s
Smart Meter	Inverter internal relay trip in ＜ 5s	Inverter internal relay trip in ＜ 5s
CT	Inverter internal relay trip in ＜ 5s	Inverter internal relay trip in ＜ 5s

Operational Tests						
In accordance with EREC G100 section 5.6 undertake the tests A to D to confirm correct operation in state 1 and state 2, that transition into state 3 occurs as required, and that behaviour in state 3 is also as required.						
Test A (Setting MEL=MIL=21.7A, 0.95MEL=0.95MIL=20.8A for the test)						
Nominal Export Limit (for type tests this will be at maximum, minimum and one intermediate setting) in Amp:						EL= 21.7 Amps
Nominal Import Limit (for type tests this will be at maximum, minimum and one intermediate setting) in Amp:						IL= 21.7 Amps
No	Starting level (W)	Step value (W)	**CLS** registers change in level?	**CLS** and/or **Component** and/or **Device** initiates correct response of ≥ 5%?	Duration of step in test	Correct state 1/ state 2 operation
1	4788.46	5292.29	yes	yes	58s	Yes, state 1->2->1
2	4789.38	5543.02	yes	yes	58s	Yes, state 1->2->1
3	4787.05	5988.98	yes	yes	58s	Yes, state 1->2->1
4	4738.02	5297.90	yes	yes	58s	Yes, state 1->2->1
5	4788.58	5558.12	yes	yes	58s	Yes, state 1->2->1
6	4788.14	6018.74	yes	yes	58s	Yes, state 1->2->1
Test B (Setting MEL=MIL=21.7A, 0.95MEL=0.95MIL=20.8A for the test)						
Nominal Export Limit:						EL= 21.7 Amps
Nominal Import Limit:						IL= 21.7 Amps
No	Starting level (W)	Step value (W)	**CLS** registers change in level?	**CLS** and/or **Component** and/or **Device** initiates correct response of ≥ 5%?	Duration of step in test	Correct state 3 operation
7	4788.29	5291.86	yes	yes	62s	Yes, state 1->2->3
8	4787.85	5297.76	yes	yes	62s	Yes, state 1->2->3

State 3 Reset
These tests are to demonstrate compliance with EREC G100 section 4.5.2. Please document how the reset from state 3 to state 1 has been demonstrated. Please include how the reset is achieved. Please confirm that for **CLSs** to be installed in **Domestic installations** three (3) resets causes lockout or that for non-domestic installations lockout can only be reset after four hours. Please explain how lockout is reset.
1. After entering state 3, the system generates an alarm indicating that the power control of the grid-tied point is abnormal and the inverter enters the locked state. 2. Users or installers troubleshoot the system. 3. The installers performs reset settings through the app and starts unlocking and enters state 1. At this time, the system displays grid connected, indicating that the system has returned to normal operation mode state 1. 4. For CLSs installed in Domestic Installations, 3 resets shall be allowed in any 30-day period. If three resets occur, the Manufacturer or Installer shall propose how lock out in state 3 can be resolved.

-End-